



**Environmental
Protection Agency**

Division of Surface Water

Application for Authorization Class B Biosolids Beneficial Use Sites



Ohio Environmental Protection Agency
Division of Surface Water

Beneficial User Information

Beneficial user: Dovetail Energy, LLC		
Contact person: Bruce Bailey, VP of Technical Affairs		
Mailing address: 5755 Granger Rd. Suite 320		
City: Independence	State: Ohio	Zip: 44131
Telephone number: (216) 986-9999		
Email address: bbailey@quasareg.com		

Certification Statement

I agree to be responsible for complying with all applicable beneficial use requirements established in Chapter 3745-40 of the Ohio Administrative Code.



Signature

_____/_____/_____
Date

For purposes of this form, the beneficial user means the person who sprays or spreads Class B biosolids onto the surface of the beneficial use site, injects below the surface of the beneficial use site, or incorporates into the soil of the beneficial use site, for the purpose of providing an agronomic benefit.

Division of Surface Water
Application for Authorization
Class B Beneficial Use Sites

Form BUA-2

Owner Consent for Beneficial Use

Exemption 6

Certification Statement

1. I agree to allow biosolids generated by the treatment plant identified on Form BUA-1 to be beneficially used on my property at agronomic rates.
2. I agree to allow federal, state and local regulatory staff access to the beneficial use site for the purposes of inspecting and authorizing the beneficial use site, beneficially using biosolids, and collecting and analyzing samples from the beneficial use site. I reserve the right to ask the above parties for proper identification at any time.
3. I certify that I am holder of legal title to the property described on application form BUA-4, or am authorized by the holder to give consent for the land application of biosolids, and that there are no restrictions to the granting of consent under this form.

Exemption 6

Date

11, 24, 2014

In the event the owner of the beneficial use site changes, Form BUA-2 must be revised and resubmitted to Ohio EPA.



Form BUA-3

Beneficial Use Site Operator Consent for Beneficial Use

Beneficial use site operator: Pitstick Pork Farms, Inc.		
Mailing address: 1146 Herr Rd		
City: Fairborn	State: OH	Zip: 45324
Telephone number: 937-879-0154		
Email address (if available): tvpitstick@gmail.com		

Certification Statement

I agree to be responsible for complying with all applicable beneficial use requirements established in Chapter 3745-40 of the Ohio Administrative Code.

Ton Pitstick, Pres.
Signature

05 / 02 / 15
Date

In the event the operator of the beneficial use site changes, Form BUA-3 must be revised and resubmitted to Ohio EPA.

Beneficial User Information

Beneficial user: Dovetail Energy, LLC		
Contact person: Bruce Bailey, VP of Technical Affairs		
Mailing address: 5755 Granger Rd. Suite 320		
City: Independence	State: Ohio	Zip: 44131
Telephone number: (216) 986-9999		
Email address (if available): bbailey@quasareg.com		



Google earth



GRQ-05-01 (JC100)

Enon-Xenia Pike

Wilkerson Rd

WEnon Rd

Armstrong Rd

1449 ft

© 2015 Google

Google earth

ED_014244A_00000151-00006

Beneficial Use Site Information

Ohio EPA Site I.D. (Ohio EPA Use Only)

Field site I.D.: GRQ-05-01			
Beneficial use site location: N of Armstrong Rd, 0.25 miles W of W. Enon Rd.			
County: Greene		Township: Bath	
Latitude: 39°50'26.77"N		Longitude: 83°57'37.31"W	
Total acreage proposed for beneficial use: 121.5			
Type of beneficial use to be performed:		Ground slope percent:	
Surface application <input type="checkbox"/>		Less than 15% <input checked="" type="checkbox"/> 15% to 19.9% <input checked="" type="checkbox"/>	
Injection or immediate incorporation <input checked="" type="checkbox"/>		Greater than 20% <input type="checkbox"/>	
Soil pH (s.u): 6.71		Soil phosphorus (mg/kg): 22.4	
Bedrock depth (feet): >3ft		Bray Kurtz P1 <input checked="" type="checkbox"/> Mehlich 3 <input type="checkbox"/>	
Type of crops to be grown:			
		Crop Type	Expected Yield
		Corn	180 bu
		Soybeans	60 bu
		Wheat	
		Pasture	
		Hay	
		Other:	
Soil Types:			
Soil Unit Symbol	Soil Unit Name	Hydrologic Soil Group	Flooding Frequency Class
CcD2	Casco-Eldean loams, 12-18% slopes, moderately eroded	B	None
EmB	Eldean silt loam, 2-6% slopes	B	None
EmB2	Eldean silt loam, 2-6% slopes, moderately eroded	B	None
EmC2	Eldean silt loam, 6-12% slopes, moderately eroded	B	None
EoD2	Eldean-Miamian complex, 12-18% slopes, eroded	B	None
Gn	Genesee loam	B	None

Division of Surface Water
Application for Authorization: Class B Beneficial Use Sites

MhB	Miamian silt loam, 2-6% slopes	C	None
MhC2	Miamian silt loam, 6-12% slopes, moderately eroded	C	None
RkE	Rodman gravelly loam, 18-35% slopes	A	None

Ohio EPA Application for Authorization (1/15)

Form BUA-5

Applicable isolation distances:

Type of Isolation Distance			
Surface waters of the state	<input checked="" type="checkbox"/>	Sinkhole/UIC class V drainage	<input type="checkbox"/>
Occupied building	<input checked="" type="checkbox"/>	Private potable water source	<input type="checkbox"/>
Medical care facility	<input type="checkbox"/>		

Are any endangered species or endangered species habitats located on the beneficial use site?

☐ Yes ☒ No

If "Yes" is marked, list the types of endangered species or endangered species habitat:

--

Have biosolids been beneficially used on the site since July 20, 1993?

☐ Yes ☒ No

If "Yes" is marked, list the biosolids generators and years beneficial use occurred:

Generator	NPDES permit No.	Year of Beneficial Use

Division of Surface Water
Application for Authorization: Class B Beneficial Use Sites

The application must also include all of the following:

- A soil map of the proposed beneficial use site.
- A frequency flood class map of the proposed beneficial use site.
- An aerial map of the proposed beneficial use site that clearly identifies the entrance of the beneficial use site from the nearest road and all applicable isolation distances as established in Chapter 3745-40 of the Ohio Administrative Code.
- A vicinity road map at or near the township level that clearly identifies the proposed beneficial use site with all roads labeled.
- A copy of the most recent soil test results identified in this form.

GRQ-05-01 (JC100)

Total Acreage: 121.5 Acres

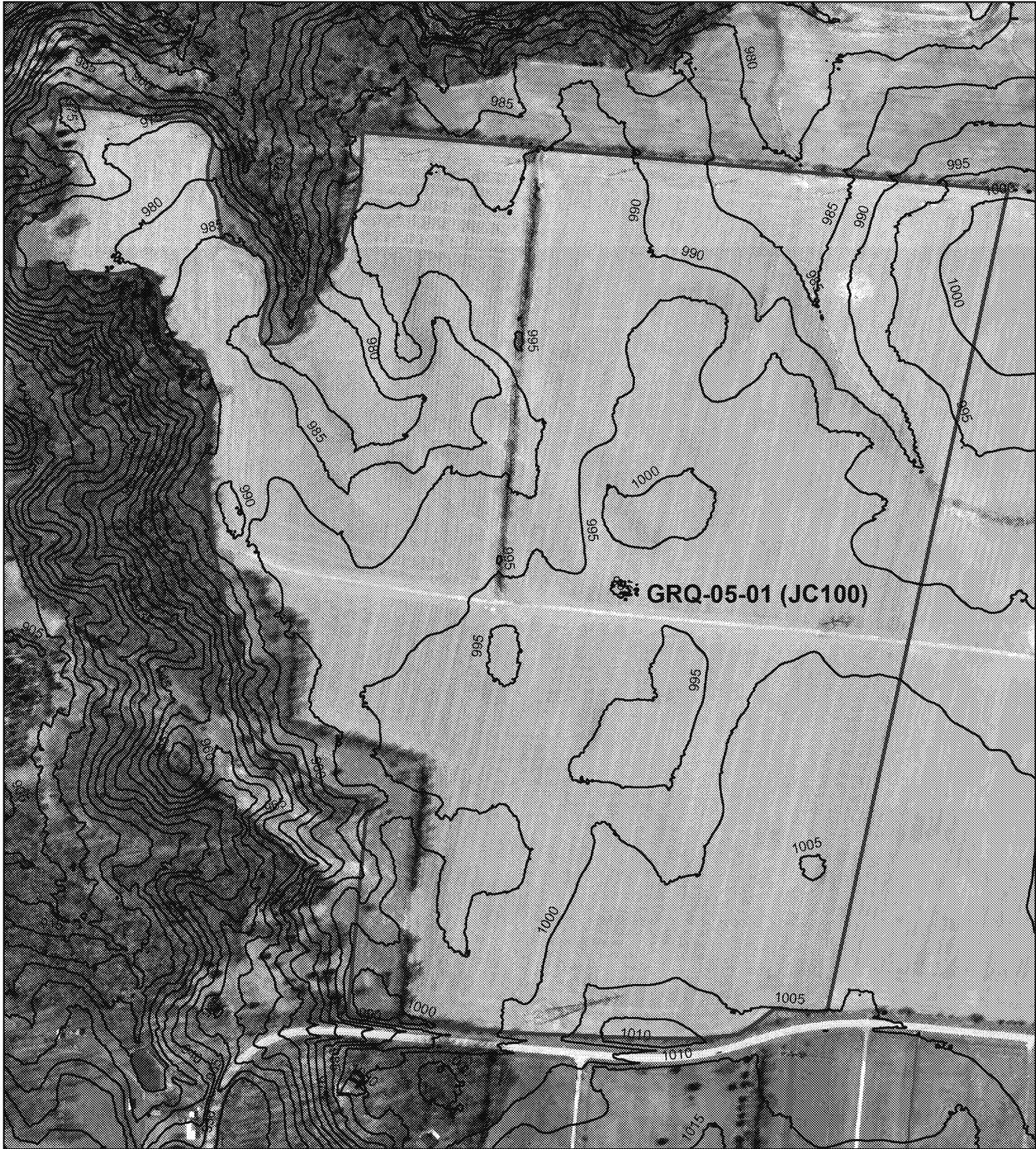


0 300 600 1,200 Feet

- Residences
- 100ft Res Buffer
- 33ft Water Buffer
- 300ft Res Buffer
- Watercourse

GRQ-05-01 (JC100)

Total Acreage: 121.5 Acres



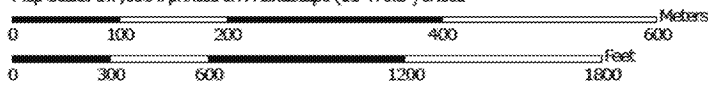
0 300 600 1,200 Feet

—— 5ft Contours

Custom Soil Resource Report Soil Map



Map Scale: 1:7,000 if printed on A landscape (11" x 8.5") sheet.




Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 17N WGS84

Custom Soil Resource Report

MAP LEGEND


Area of Interest (AOI)

 Area of Interest (AOI)


Soils


 Soil Map Unit Polygons

 Soil Map Unit Lines


 Soil Map Unit Points

Special Point Features

 Blowout


 Borrow Pit

 Clay Spot

 Closed Depression


 Gravel Pit

 Gravelly Spot

 Landfill


 Lava Flow

 Marsh or swamp

 Mine or Quarry

 Miscellaneous Water


 Perennial Water

 Rock Outcrop

 Saline Spot

 Sandy Spot

 Severely Eroded Spot


 Sinkhole


 Slide or Slip


 Sodic Spot


 Spoil Area

 Stony Spot

 Very Stony Spot

 Wet Spot

 Other


 Special Line Features


Water Features


 Streams and Canals

Transportation

 Rails

 Interstate Highways

 US Routes

 Major Roads

 Local Roads

Background

 Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Greene County, Ohio
Survey Area Data: Version 11, Sep 18, 2014

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Feb 6, 2012—Mar 10, 2012

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Greene County, Ohio (OH057)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
CcD2	Casco-Eldean loams, 12 to 18 percent slopes, moderately eroded	1.0	0.8%
EmB	Eldean silt loam, 2 to 6 percent slopes	51.9	45.3%
EmB2	Eldean silt loam, 2 to 6 percent slopes, moderately eroded	12.3	10.7%
EmC2	Eldean silt loam, 6 to 12 percent slopes, moderately eroded	12.1	10.6%
EoD2	Eldean-Miamian complex, 12 to 18 percent slopes, eroded	1.7	1.5%
Gn	Genesee loam	3.2	2.8%
MhB	Miamian silt loam, 2 to 6 percent slopes	19.1	16.6%
MhC2	Miamian silt loam, 6 to 12 percent slopes, moderately eroded	9.9	8.6%
RkE	Rodman gravelly loam, 18 to 35 percent slopes	3.6	3.2%
Totals for Area of Interest		114.8	100.0%

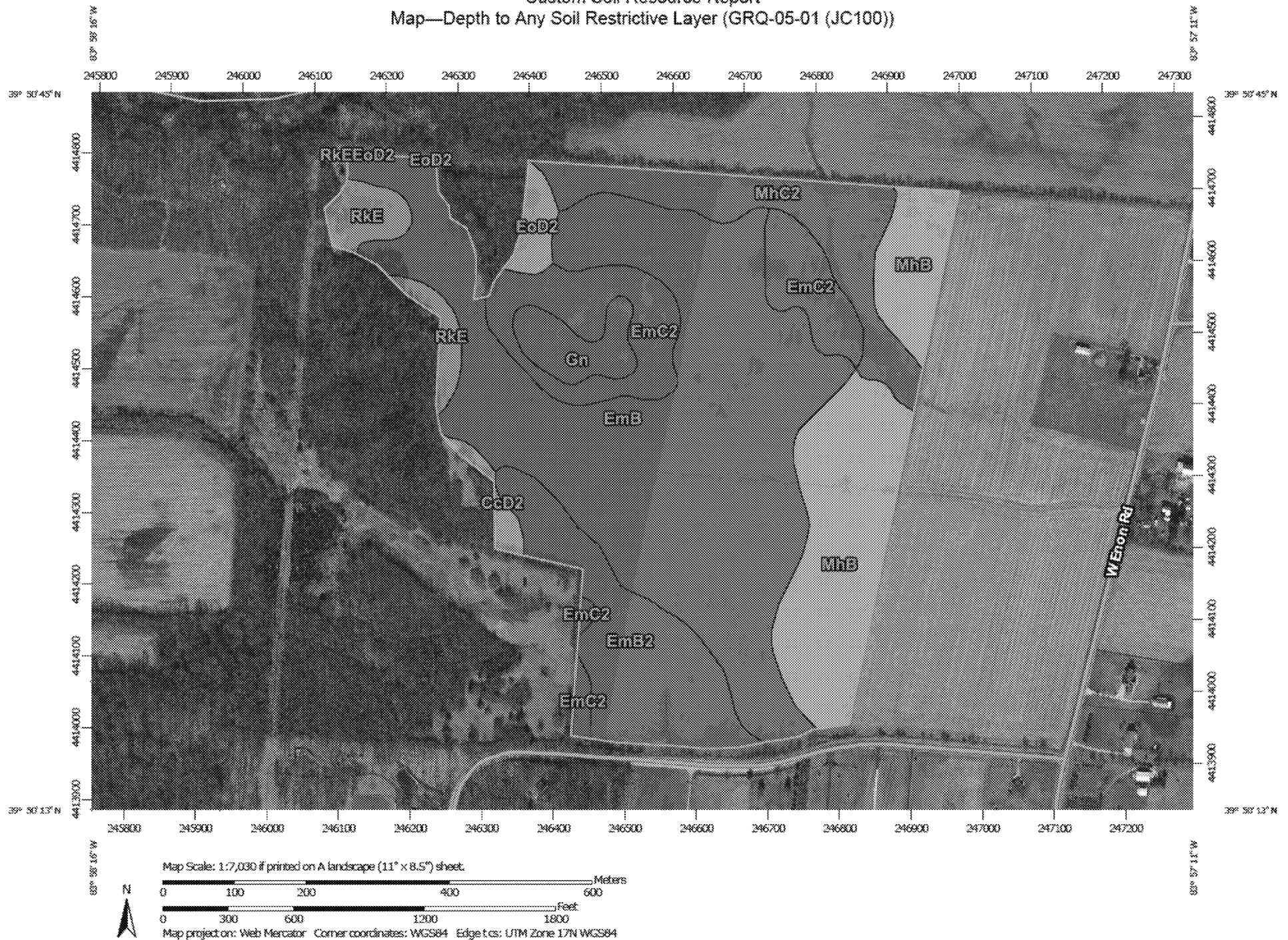
Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.


Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different

Custom Soil Resource Report
Map—Depth to Any Soil Restrictive Layer (GRQ-05-01 (JC100))










MAP LEGEND

Area of Interest (AOI)








 Area of Interest (AOI)

Soils







Soil Rating Polygons


-  0 - 25
-  25 - 50
-  50 - 100
-  100 - 150
-  150 - 200
-  > 200
-  Not rated or not available

Soil Rating Lines

-  0 - 25
-  25 - 50
-  50 - 100
-  100 - 150
-  150 - 200
-  > 200
-  Not rated or not available

Soil Rating Points

-  0 - 25
-  25 - 50
-  50 - 100
-  100 - 150
-  150 - 200
-  > 200

 Not rated or not available

Water Features

 Streams and Canals

Transportation

-  Rails
-  Interstate Highways
-  US Routes
-  Major Roads
-  Local Roads

Background

 Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Greene County, Ohio
Survey Area Data: Version 11, Sep 18, 2014

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Feb 6, 2012—Mar 10, 2012

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Table—Depth to Any Soil Restrictive Layer (GRQ-05-01 (JC100))

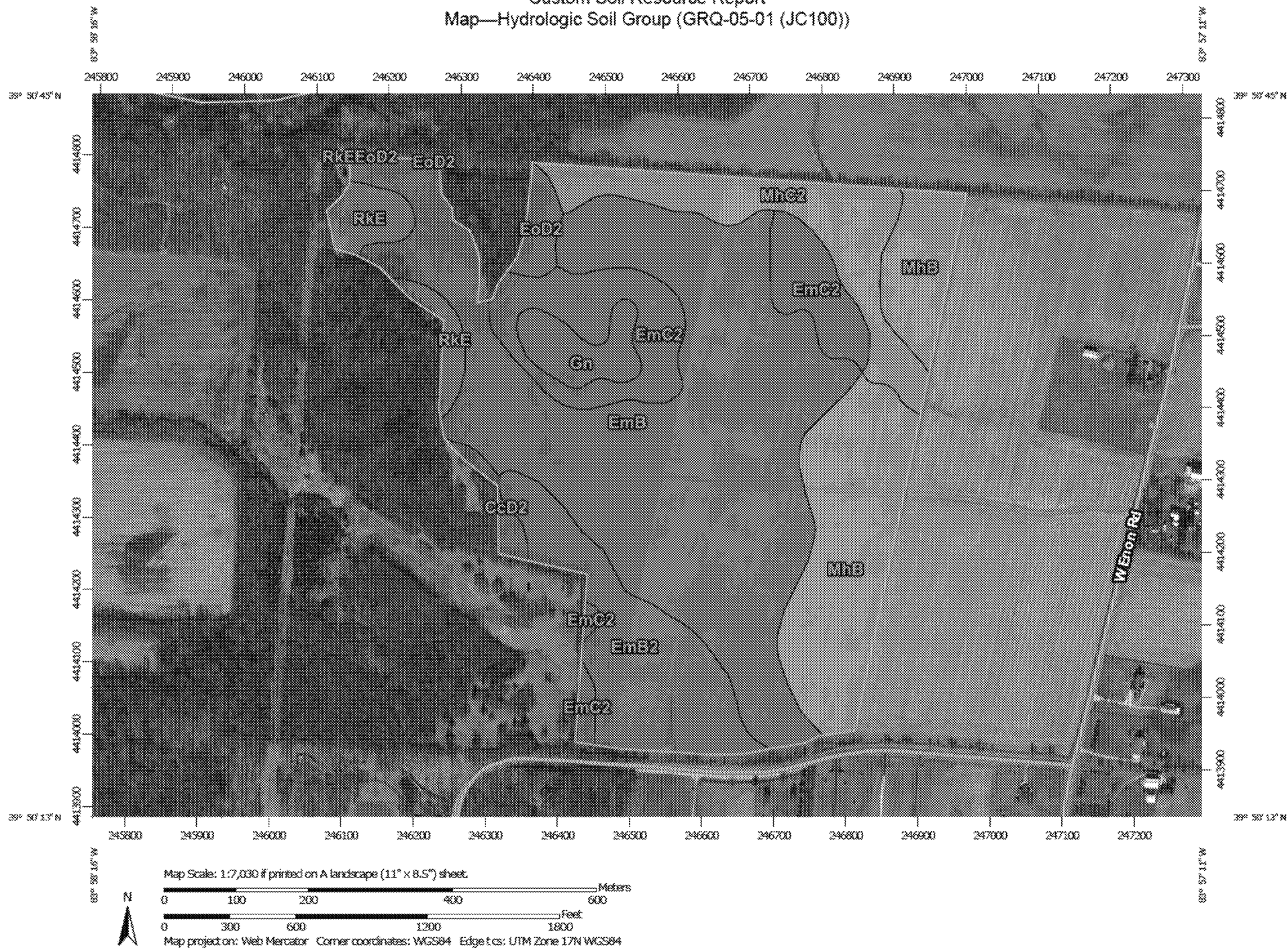
Depth to Any Soil Restrictive Layer— Summary by Map Unit — Greene County, Ohio (OH057)				
Map unit symbol	Map unit name	Rating (centimeters)	Acres in AOI	Percent of AOI
CcD2	Casco-Eldean loams, 12 to 18 percent slopes, moderately eroded	51	1.0	0.8%
EmB	Eldean silt loam, 2 to 6 percent slopes	>200	51.9	45.3%
EmB2	Eldean silt loam, 2 to 6 percent slopes, moderately eroded	>200	12.3	10.7%
EmC2	Eldean silt loam, 6 to 12 percent slopes, moderately eroded	>200	12.1	10.6%
EoD2	Eldean-Miamian complex, 12 to 18 percent slopes, eroded	66	1.7	1.5%
Gn	Genesee loam	>200	3.2	2.8%
MhB	Miamian silt loam, 2 to 6 percent slopes	91	19.1	16.6%
MhC2	Miamian silt loam, 6 to 12 percent slopes, moderately eroded	>200	9.9	8.6%
RkE	Rodman gravelly loam, 18 to 35 percent slopes	30	3.6	3.2%
Totals for Area of Interest			114.8	100.0%

Rating Options—Depth to Any Soil Restrictive Layer (GRQ-05-01 (JC100))*Units of Measure:* centimeters*Aggregation Method:* Dominant Component*Component Percent Cutoff:* None Specified*Tie-break Rule:* Lower*Interpret Nulls as Zero:* No**Hydrologic Soil Group (GRQ-05-01 (JC100))**

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.


The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Custom Soil Resource Report
Map—Hydrologic Soil Group (GRQ-05-01 (JC100))











MAP LEGEND

Area of Interest (AOI)









 Area of Interest (AOI)

Soils





Soil Rating Polygons





 A
 A/D
 B
 B/D
 C
 C/D
 D
 Not rated or not available

Soil Rating Lines

 A
 A/D
 B
 B/D
 C
 C/D
 D
 Not rated or not available

Soil Rating Points

 A
 A/D
 B
 B/D

 C
 C/D
 D
 Not rated or not available

Water Features

 Streams and Canals

Transportation

 Rails
 Interstate Highways
 US Routes
 Major Roads
 Local Roads

Background

 Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
 Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Greene County, Ohio
 Survey Area Data: Version 11, Sep 18, 2014

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Feb 6, 2012—Mar 10, 2012

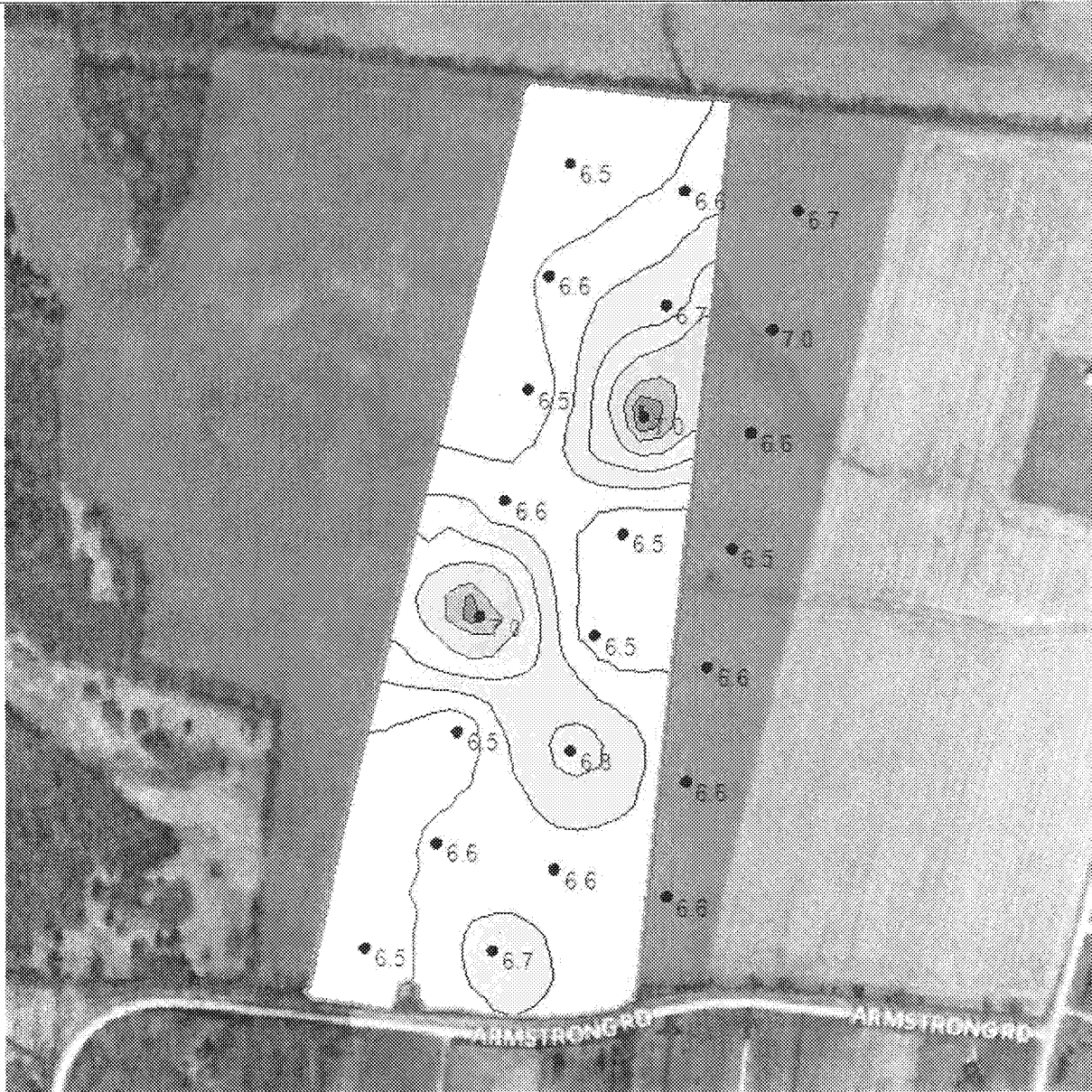
The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Table—Hydrologic Soil Group (GRQ-05-01 (JC100))

Hydrologic Soil Group— Summary by Map Unit — Greene County, Ohio (OH057)				
Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
CcD2	Casco-Eldean loams, 12 to 18 percent slopes, moderately eroded	B	1.0	0.8%
EmB	Eldean silt loam, 2 to 6 percent slopes	B	51.9	45.3%
EmB2	Eldean silt loam, 2 to 6 percent slopes, moderately eroded	B	12.3	10.7%
EmC2	Eldean silt loam, 6 to 12 percent slopes, moderately eroded	B	12.1	10.6%
EoD2	Eldean-Miamian complex, 12 to 18 percent slopes, eroded	B	1.7	1.5%
Gn	Genesee loam	B	3.2	2.8%
MhB	Miamian silt loam, 2 to 6 percent slopes	C	19.1	16.6%
MhC2	Miamian silt loam, 6 to 12 percent slopes, moderately eroded	C	9.9	8.6%
RkE	Rodman gravelly loam, 18 to 35 percent slopes	A	3.6	3.2%
Totals for Area of Interest			114.8	100.0%

Rating Options—Hydrologic Soil Group (GRQ-05-01 (JC100))*Aggregation Method: Dominant Condition**Component Percent Cutoff: None Specified**Tie-break Rule: Higher*

BpH Surface



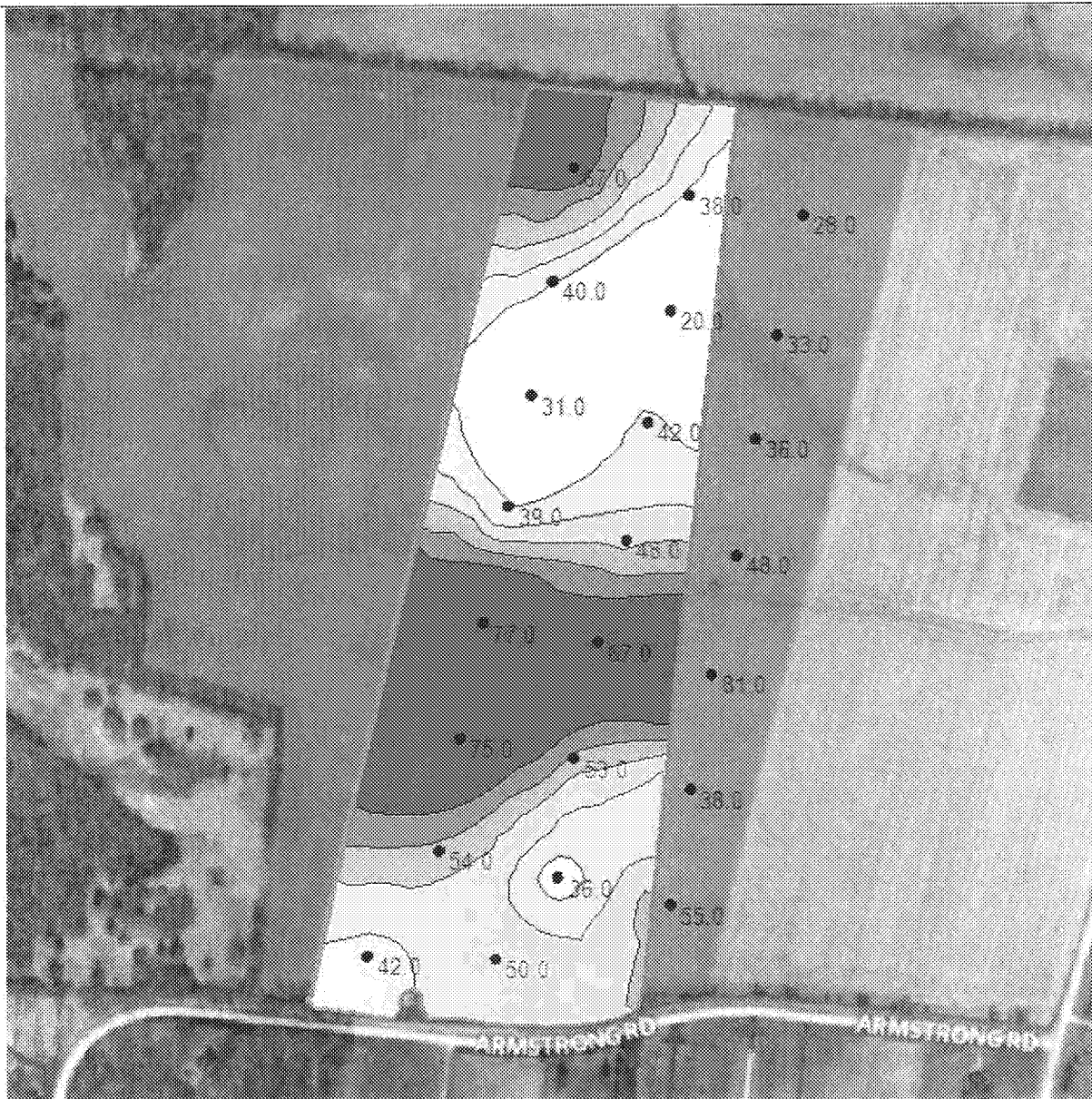
Grower: Bob McClure
 (8119098)
 Farm: Wilkerson
 Field: WK-19
 Area: 46.55 ac

Season: 2013
 Min: 6.49 PH SCALE
 Avg: 6.63 PH SCALE
 Max: 6.96 PH SCALE



Field Boundary
BpH PH SCALE
6.5 - 6.6 (15.8 ac) (34.0 %)
6.6 - 6.7 (16.1 ac) (34.5 %)
6.7 - 6.7 (7.9 ac) (17.0 %)
6.7 - 6.8 (3.6 ac) (7.8 %)
6.8 - 6.9 (2.2 ac) (4.8 %)
6.9 - 6.9 (0.5 ac) (1.1 %)
6.9 - 7 (0.3 ac) (0.7 %)
7 (0.1 ac) (0.2 %)

P Surface



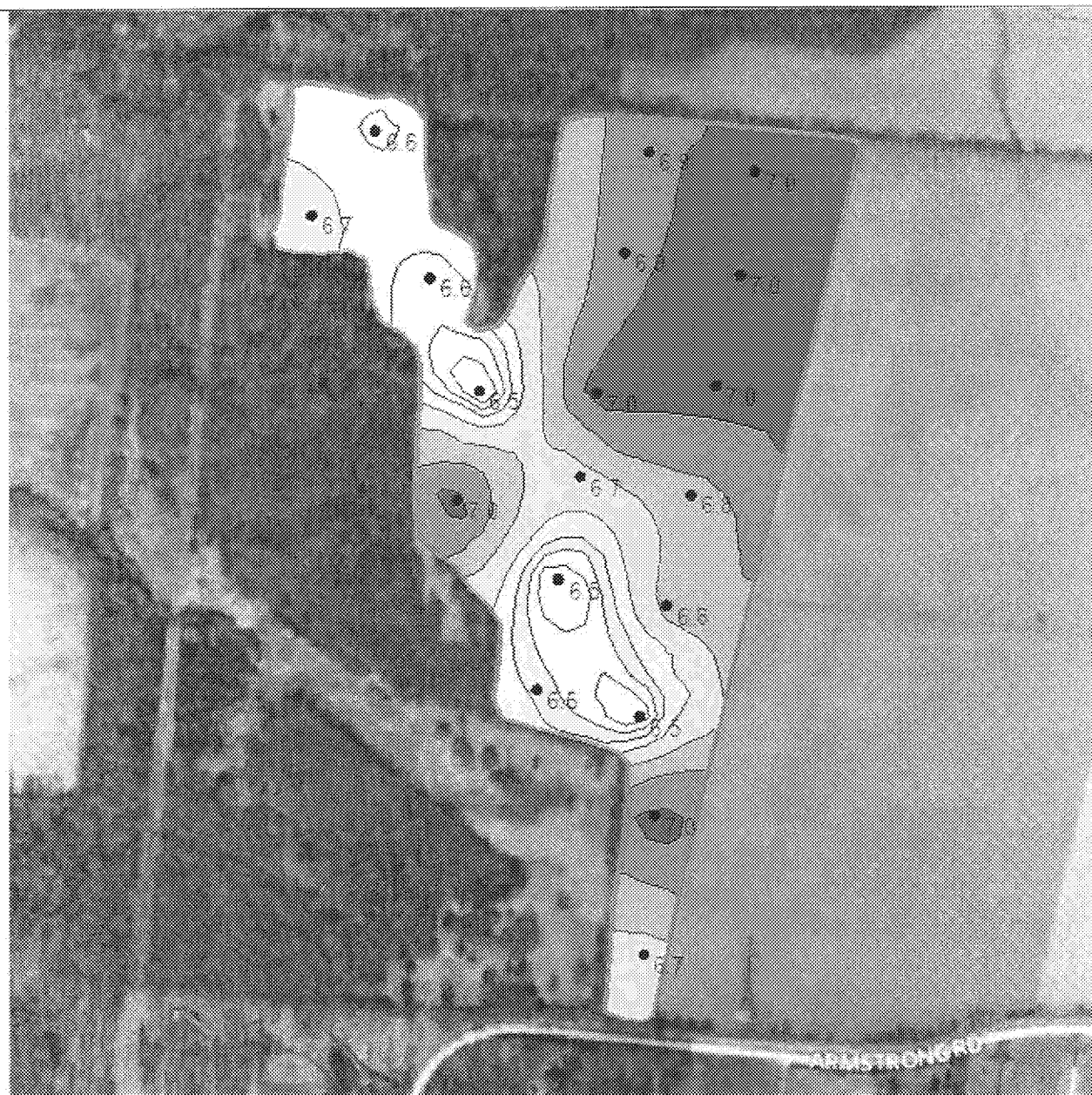
Grower: Bob McClure
 (8119098)
 Farm: Wilkerson
 Field: WK-19
 Area: 46.55 ac

Season: 2013
 Min: 21.88 lb/ac
 Avg: 50.08 lb/ac
 Max: 76.80 lb/ac



Field Boundary
P lb/ac
< 40 (10.1 ac) (21.7 %)
40 - 45 (7.5 ac) (16.2 %)
45 - 50 (9.5 ac) (20.5 %)
50 - 55 (4.1 ac) (8.8 %)
55 - 60 (3.7 ac) (7.9 %)
> 60 (11.6 ac) (25.0 %)

BpH Surface



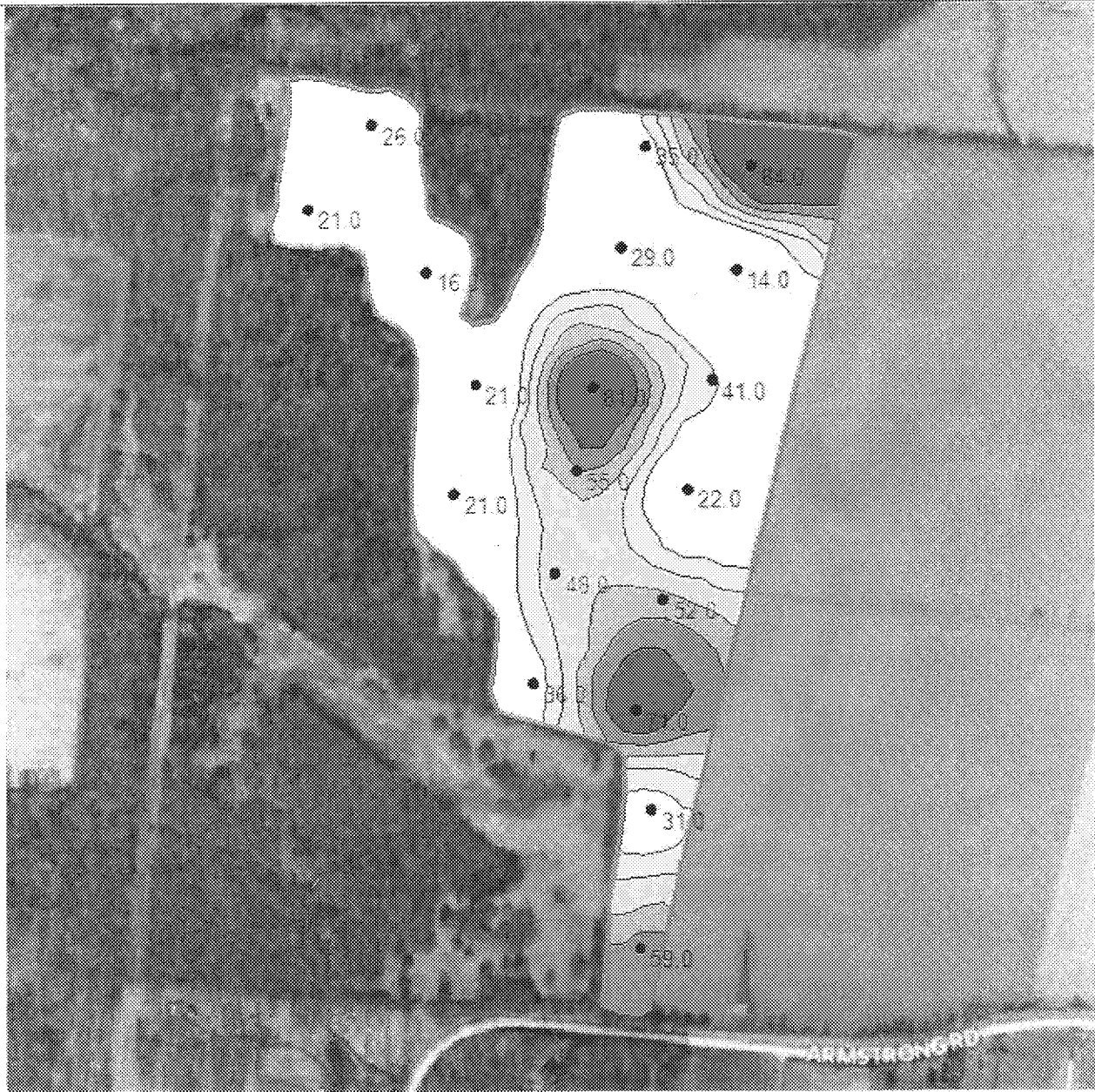
Grower: Bob McClure
(8119098)
Farm: Wilkerson
Field: WK-18
Area: 47.90 ac

Season: 2013
Min: 6.51 PH SCALE
Avg: 6.79 PH SCALE
Max: 7.02 PH SCALE



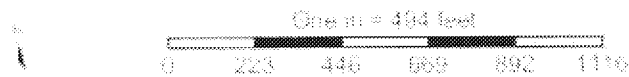
—	Field Boundary
	BpH PH SCALE
	6.5 - 6.6 (1.3 ac) (2.8 %)
	6.6 - 6.6 (2.1 ac) (4.5 %)
	6.6 - 6.6 (3.4 ac) (7.1 %)
	6.6 - 6.7 (6.6 ac) (13.9 %)
	6.7 - 6.7 (6.4 ac) (13.4 %)
■	6.7 - 6.8 (8.3 ac) (17.4 %)
■	6.8 - 6.9 (8.4 ac) (17.6 %)
■	6.9 - 7 (11.2 ac) (23.4 %)

P Surface



Grower: Bob McClure
(8119098)
Farm: Wilkerson
Field: WK-18
Area: 47.90 ac

Season: 2013
Min: 14.62 lb/ac
Avg: 39.69 lb/ac
Max: 80.96 lb/ac



—	Field Boundary
	P lb/ac
	< 40 (25.5 ac) (53.2 %)
	40 - 45 (5.4 ac) (11.2 %)
	45 - 50 (5.3 ac) (11.1 %)
	50 - 55 (3.8 ac) (7.8 %)
	55 - 60 (3.5 ac) (7.2 %)
	> 60 (4.5 ac) (9.4 %)



Yellow Springs Fairfield Rd

GRQ-05-05 (HE 12)

GRQ-05-08 (HE 7)

GRQ-06-01 (HER 9)

GRQ-06-02 (HER 40)

235

Byron Rd

1663 ft

© 2015 Google

Google earth

ED_014244A_00000151-00025



Beneficial Use Site Information

Ohio EPA Site I.D. (Ohio EPA Use Only)

Field site I.D.: GRQ-05-05																	
Beneficial use site location: 0.5 miles E of Byron Rd, S of Yellow Springs Fairfield Rd.																	
County: Greene		Township: Bath															
Latitude: 39°49'15.95"N		Longitude: 83°58'12.59"W															
Total acreage proposed for beneficial use: 11.1																	
Type of beneficial use to be performed: Surface application <input type="checkbox"/> Injection or immediate incorporation <input checked="" type="checkbox"/>		Ground slope percent: <table border="1"> <tr> <td>Less than 15%</td> <td><input checked="" type="checkbox"/></td> <td>15% to 19.9%</td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td>Greater than 20%</td> <td><input type="checkbox"/></td> <td colspan="2"> </td> </tr> </table>		Less than 15%	<input checked="" type="checkbox"/>	15% to 19.9%	<input checked="" type="checkbox"/>	Greater than 20%	<input type="checkbox"/>								
Less than 15%	<input checked="" type="checkbox"/>	15% to 19.9%	<input checked="" type="checkbox"/>														
Greater than 20%	<input type="checkbox"/>																
Soil pH (s.u): 7.4		Soil phosphorus (mg/kg): 15															
Bedrock depth (feet): >3ft		Bray Kurtz P1 <input checked="" type="checkbox"/> Mehlich 3 <input type="checkbox"/>															
Type of crops to be grown: <table border="1"> <thead> <tr> <th>Crop Type</th> <th>Expected Yield</th> </tr> </thead> <tbody> <tr> <td>Corn</td> <td>180 bu</td> </tr> <tr> <td>Soybeans</td> <td>60 bu</td> </tr> <tr> <td>Wheat</td> <td> </td> </tr> <tr> <td>Pasture</td> <td> </td> </tr> <tr> <td>Hay</td> <td> </td> </tr> <tr> <td>Other:</td> <td> </td> </tr> </tbody> </table>				Crop Type	Expected Yield	Corn	180 bu	Soybeans	60 bu	Wheat		Pasture		Hay		Other:	
Crop Type	Expected Yield																
Corn	180 bu																
Soybeans	60 bu																
Wheat																	
Pasture																	
Hay																	
Other:																	
Soil Types:																	
Soil Unit Symbol	Soil Unit Name	Hydrologic Soil Group	Flooding Frequency Class														
EmC2	Eldean silt loam, 6-12% slopes, moderately eroded	B	None														
MmD2	Miamian-Casco complex, 12-18% slopes, moderately eroded	C	None														
So	Sloan silty clay loam	B/D	Frequent														
WeB	Wea silt loam, 1-3% slopes	B	None														

Division of Surface Water
Application for Authorization: Class B Beneficial Use Sites

Ohio EPA Application for Authorization (1/15)

Form BUA-5

Applicable isolation distances:

Type of Isolation Distance			
Surface waters of the state	<input checked="" type="checkbox"/>	Sinkhole/UIC class V drainage	<input type="checkbox"/>
Occupied building	<input checked="" type="checkbox"/>	Private potable water source	<input type="checkbox"/>
Medical care facility	<input type="checkbox"/>		

Are any endangered species or endangered species habitats located on the beneficial use site?

☐ Yes ☒ No

If "Yes" is marked, list the types of endangered species or endangered species habitat:

--

Have biosolids been beneficially used on the site since July 20, 1993?

☐ Yes ☒ No

If "Yes" is marked, list the biosolids generators and years beneficial use occurred:

Generator	NPDES permit No.	Year of Beneficial Use

The application must also include all of the following:

- ☒ A soil map of the proposed beneficial use site.
- ☒ A frequency flood class map of the proposed beneficial use site.
- ☒ An aerial map of the proposed beneficial use site that clearly identifies the entrance of the beneficial use site from the nearest road and all applicable isolation distances as established in Chapter 3745-40 of the Ohio Administrative Code.
- ☒ A vicinity road map at or near the township level that clearly identifies the proposed beneficial use site with all roads labeled.
- ☒ A copy of the most recent soil test results identified in this form.

GRQ-05-05 (HE 12)

Total Acreage: 11.1 Acres



0 150 300 600 Feet

- Residences
- 100ft Res Buffer
- 33ft Water Buffer
- Waterways
- 300ft Res Buffer

GRQ-05-05 (HE 12)

Total Acreage: 11.1 Acres



0 150 300 600 Feet

—— 5ft Contours

Custom Soil Resource Report Soil Map



Map Scale: 1:2,350 if printed on A portrait (8.5" x 11") sheet.




Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 17N WGS84

Custom Soil Resource Report

MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)


Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines


 Soil Map Unit Points

Special Point Features

 Blowout


 Borrow Pit

 Clay Spot

 Closed Depression

 Gravel Pit

 Gravelly Spot

 Landfill


 Lava Flow

 Marsh or swamp

 Mine or Quarry

 Miscellaneous Water


 Perennial Water

 Rock Outcrop

 Saline Spot

 Sandy Spot

 Severely Eroded Spot


 Sinkhole


 Slide or Slip


 Sodic Spot

 Spoil Area

 Stony Spot

 Very Stony Spot

 Wet Spot

 Other


 Special Line Features

Water Features


 Streams and Canals

Transportation

 Rails

 Interstate Highways

 US Routes

 Major Roads

 Local Roads

Background

 Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Greene County, Ohio
Survey Area Data: Version 11, Sep 18, 2014

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Feb 6, 2012—Mar 10, 2012

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Greene County, Ohio (OH057)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
EmC2	Eldean silt loam, 6 to 12 percent slopes, moderately eroded	0.3	3.0%
MmD2	Miamian-Casco complex, 12 to 18 percent slopes, moderately eroded	6.0	58.6%
So	Sloan silty clay loam	0.7	6.7%
WeB	Wea silt loam, 1 to 3 percent slopes	3.3	31.7%
Totals for Area of Interest		10.3	100.0%

Map Unit Descriptions

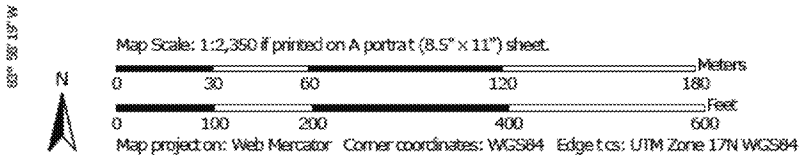
The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.


The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic

Custom Soil Resource Report
 Map—Depth to Any Soil Restrictive Layer (GRQ-05-05 (HE 12))










MAP LEGEND

Area of Interest (AOI)








 Area of Interest (AOI)

Soils







Soil Rating Polygons


-  0 - 25
-  25 - 50
-  50 - 100
-  100 - 150
-  150 - 200
-  > 200
-  Not rated or not available

Soil Rating Lines

-  0 - 25
-  25 - 50
-  50 - 100
-  100 - 150
-  150 - 200
-  > 200
-  Not rated or not available

Soil Rating Points

-  0 - 25
-  25 - 50
-  50 - 100
-  100 - 150
-  150 - 200
-  > 200

 Not rated or not available

Water Features

 Streams and Canals

Transportation

-  Rails
-  Interstate Highways
-  US Routes
-  Major Roads
-  Local Roads

Background

 Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Greene County, Ohio
Survey Area Data: Version 11, Sep 18, 2014

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Feb 6, 2012—Mar 10, 2012

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Table—Depth to Any Soil Restrictive Layer (GRQ-05-05 (HE 12))

Depth to Any Soil Restrictive Layer— Summary by Map Unit — Greene County, Ohio (OH057)				
Map unit symbol	Map unit name	Rating (centimeters)	Acres in AOI	Percent of AOI
EmC2	Eldean silt loam, 6 to 12 percent slopes, moderately eroded	>200	0.3	3.0%
MmD2	Miamian-Casco complex, 12 to 18 percent slopes, moderately eroded	>200	6.0	58.6%
So	Sloan silty clay loam	>200	0.7	6.7%
WeB	Wea silt loam, 1 to 3 percent slopes	114	3.3	31.7%
Totals for Area of Interest			10.3	100.0%

Rating Options—Depth to Any Soil Restrictive Layer (GRQ-05-05 (HE 12))

Units of Measure: centimeters

Aggregation Method: Dominant Component

Component Percent Cutoff: None Specified

Tie-break Rule: Lower

Interpret Nulls as Zero: No

Hydrologic Soil Group (GRQ-05-05 (HE 12))

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.


Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Custom Soil Resource Report
Map—Hydrologic Soil Group (GRQ-05-05 (HE 12))











MAP LEGEND

Area of Interest (AOI)









 Area of Interest (AOI)

Soils





Soil Rating Polygons





 A
 A/D
 B
 B/D
 C
 C/D
 D
 Not rated or not available

Soil Rating Lines


 A
 A/D
 B
 B/D
 C
 C/D
 D
 Not rated or not available

Soil Rating Points

 A
 A/D
 B
 B/D

 C
 C/D
 D
 Not rated or not available

Water Features

 Streams and Canals

Transportation

 Rails
 Interstate Highways
 US Routes
 Major Roads
 Local Roads

Background

 Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
 Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Greene County, Ohio
 Survey Area Data: Version 11, Sep 18, 2014

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Feb 6, 2012—Mar 10, 2012

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Table—Hydrologic Soil Group (GRQ-05-05 (HE 12))

Hydrologic Soil Group— Summary by Map Unit — Greene County, Ohio (OH057)				
Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
EmC2	Eldean silt loam, 6 to 12 percent slopes, moderately eroded	B	0.3	3.0%
MmD2	Miamian-Casco complex, 12 to 18 percent slopes, moderately eroded	C	6.0	58.6%
So	Sloan silty clay loam	B/D	0.7	6.7%
WeB	Wea silt loam, 1 to 3 percent slopes	B	3.3	31.7%
Totals for Area of Interest			10.3	100.0%

Rating Options—Hydrologic Soil Group (GRQ-05-05 (HE 12))*Aggregation Method:* Dominant Condition*Component Percent Cutoff:* None Specified*Tie-break Rule:* Higher

REPORT TO: 629

QUASAR ENERGY GROUP

MB

ATTN: MIKE BOLTON

WOOSTER, OH 44691

146.006

CROP PRODUCTION

SOIL TEST AND RECOMMENDATION REPORT

GROWER NAME: Exemption 12

05/13/15 C

CLC LABS®

325 VENTURE DRIVE
WESTERVILLE, OHIO 43081
614-888-1063

LAB NO.		RESULTS OF ANALYSIS							CALCULATED VALUES					RESULTS OF ANALYSIS														
3171		Soil pH	Buffer pH	Pounds per Acre Available Nutrient				% Organic Matter	Cation Exchange Capacity	% Base Saturation					Pounds per Acre Available Nutrient													
Field	Sample			P1	K	Ca	Mg			K	Ca	Mg	H	Na	Zn	Mn	Cu	Fe	S	B								
		7.4		30	281	7980	475	3.3	22.3	1.6	89	9																

DISPLAY OF AVERAGE RESULTS

SURPLUS																					
HIGH						*		*		*											
MEDIUM				*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
LOW				*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*

3171			RECOMMENDATIONS FOR		LIME		NUTRIENT RECOMMENDATIONS POUNDS PER ACRE										RECOMMENDATION TYPE	
FIELD NUMBER	SAMPLE NUMBER	ACRES	CROP	YIELD GOAL & UNITS	RATE TONS/A	LIME TYPE	N	P ₂ O ₅	K ₂ O	Zn	S	Mn	B	Cu		Build-up amounts		
		12.0	CORN GRAIN	200BU			175	125	145							P205 K20		
																50 1 yr 100 1 yr		
								</										

Build-up amounts are already included in recommendation. Total amounts minus
Build-up amounts equal annual requirements which includes crop removal amounts.

SEE COMMENTS ON REVERSE SIDE

ED_014244A_00000151-00039

Beneficial Use Site Information

Ohio EPA Site I.D. (Ohio EPA Use Only)

Field site I.D.: GRQ-05-08																	
Beneficial use site location: 0.5 miles E of Bryon Rd, 0.4 miles S of Yellow Springs Fairfield Rd																	
County: Greene		Township: Bath															
Latitude: 39°49'0.37"N		Longitude: 83°58'13.49"W															
Total acreage proposed for beneficial use: 6.8																	
Type of beneficial use to be performed: Surface application <input type="checkbox"/> Injection or immediate incorporation <input checked="" type="checkbox"/>		Ground slope percent: <table border="1"> <tr> <td>Less than 15%</td> <td><input checked="" type="checkbox"/></td> <td>15% to 19.9%</td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td>Greater than 20%</td> <td><input type="checkbox"/></td> <td colspan="2"> </td> </tr> </table>		Less than 15%	<input checked="" type="checkbox"/>	15% to 19.9%	<input checked="" type="checkbox"/>	Greater than 20%	<input type="checkbox"/>								
Less than 15%	<input checked="" type="checkbox"/>	15% to 19.9%	<input checked="" type="checkbox"/>														
Greater than 20%	<input type="checkbox"/>																
Soil pH (s.u): 7.3		Soil phosphorus (mg/kg): 29															
Bedrock depth (feet): >3ft		Bray Kurtz P1 <input checked="" type="checkbox"/> Mehlich 3 <input type="checkbox"/>															
Type of crops to be grown: <table border="1"> <thead> <tr> <th>Crop Type</th> <th>Expected Yield</th> </tr> </thead> <tbody> <tr> <td>Corn</td> <td>180 bu</td> </tr> <tr> <td>Soybeans</td> <td>60 bu</td> </tr> <tr> <td>Wheat</td> <td> </td> </tr> <tr> <td>Pasture</td> <td> </td> </tr> <tr> <td>Hay</td> <td> </td> </tr> <tr> <td>Other:</td> <td> </td> </tr> </tbody> </table>				Crop Type	Expected Yield	Corn	180 bu	Soybeans	60 bu	Wheat		Pasture		Hay		Other:	
Crop Type	Expected Yield																
Corn	180 bu																
Soybeans	60 bu																
Wheat																	
Pasture																	
Hay																	
Other:																	
Soil Types:																	
Soil Unit Symbol	Soil Unit Name	Hydrologic Soil Group	Flooding Frequency Class														
MmD2	Miamian-Casco complex, 12-18% slopes, moderately eroded	C	None														
MtC2	Milton silt loam, 6-12% slopes, moderately eroded	C	None														
So	Sloan silty clay loam	C/D	Frequent														

Division of Surface Water
Application for Authorization: Class B Beneficial Use Sites

Ohio EPA Application for Authorization (1/15)

Form BUA-5

Applicable isolation distances:

Type of Isolation Distance			
Surface waters of the state	<input checked="" type="checkbox"/>	Sinkhole/UIC class V drainage	<input type="checkbox"/>
Occupied building	<input type="checkbox"/>	Private potable water source	<input type="checkbox"/>
Medical care facility	<input type="checkbox"/>		

Are any endangered species or endangered species habitats located on the beneficial use site?

☐ Yes ☒ No

If "Yes" is marked, list the types of endangered species or endangered species habitat:

--

Have biosolids been beneficially used on the site since July 20, 1993?

☐ Yes ☒ No

If "Yes" is marked, list the biosolids generators and years beneficial use occurred:

Generator	NPDES permit No.	Year of Beneficial Use

The application must also include all of the following:

- ☒ A soil map of the proposed beneficial use site.
- ☒ A frequency flood class map of the proposed beneficial use site.
- ☒ An aerial map of the proposed beneficial use site that clearly identifies the entrance of the beneficial use site from the nearest road and all applicable isolation distances as established in Chapter 3745-40 of the Ohio Administrative Code.
- ☒ A vicinity road map at or near the township level that clearly identifies the proposed beneficial use site with all roads labeled.
- ☒ A copy of the most recent soil test results identified in this form.

GRQ-05-08 (HE 7)

Total Acreage: 6.8Acres



0 150 300 600 Feet

- | | |
|---------------------|------------------|
| ----- Waterways | ● Residences |
| 33ft Water Buffer | 100ft Res Buffer |
| MtC2 Soil Exclusion | 300ft Res Buffer |

GRQ-05-08 (HE 7)

Total Acreage: 6.8 Acres



GRQ-05-08 (HE 7)

0 150 300 600 Feet

5ft Contours


Custom Soil Resource Report Soil Map



Custom Soil Resource Report

MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)


Soils


 Soil Map Unit Polygons

 Soil Map Unit Lines


 Soil Map Unit Points

Special Point Features

 Blowout


 Borrow Pit

 Clay Spot

 Closed Depression

 Gravel Pit

 Gravelly Spot

 Landfill


 Lava Flow

 Marsh or swamp

 Mine or Quarry

 Miscellaneous Water


 Perennial Water

 Rock Outcrop

 Saline Spot

 Sandy Spot

 Severely Eroded Spot


 Sinkhole


 Slide or Slip


 Sodic Spot

 Spoil Area

 Stony Spot

 Very Stony Spot

 Wet Spot

 Other

 Special Line Features


Water Features

 Streams and Canals

Transportation

 Rails

 Interstate Highways

 US Routes

 Major Roads

 Local Roads

Background

 Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Greene County, Ohio
Survey Area Data: Version 11, Sep 18, 2014

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Feb 6, 2012—Mar 10, 2012

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Greene County, Ohio (OH057)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
MmD2	Miamian-Casco complex, 12 to 18 percent slopes, moderately eroded	0.6	10.9%
MtC2	Milton silt loam, 6 to 12 percent slopes, moderately eroded	1.6	31.4%
So	Sloan silty clay loam	3.0	57.6%
Totals for Area of Interest		5.1	100.0%

Map Unit Descriptions

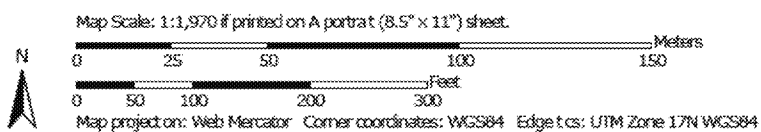
The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.


The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments

Custom Soil Resource Report
 Map—Depth to Any Soil Restrictive Layer (GRO-05-08 (HE 7))










MAP LEGEND

Area of Interest (AOI)








 Area of Interest (AOI)

Soils







Soil Rating Polygons


-  0 - 25
-  25 - 50
-  50 - 100
-  100 - 150
-  150 - 200
-  > 200
-  Not rated or not available

Soil Rating Lines


-  0 - 25
-  25 - 50
-  50 - 100
-  100 - 150
-  150 - 200
-  > 200
-  Not rated or not available

Soil Rating Points

-  0 - 25
-  25 - 50
-  50 - 100
-  100 - 150
-  150 - 200
-  > 200

 Not rated or not available

Water Features

 Streams and Canals

Transportation

-  Rails
-  Interstate Highways
-  US Routes
-  Major Roads
-  Local Roads

Background

 Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Greene County, Ohio
Survey Area Data: Version 11, Sep 18, 2014

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Feb 6, 2012—Mar 10, 2012

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Table—Depth to Any Soil Restrictive Layer (GRQ-05-08 (HE 7))

Depth to Any Soil Restrictive Layer— Summary by Map Unit — Greene County, Ohio (OH057)				
Map unit symbol	Map unit name	Rating (centimeters)	Acres in AOI	Percent of AOI
MmD2	Miamian-Casco complex, 12 to 18 percent slopes, moderately eroded	>200	0.6	10.9%
MtC2	Milton silt loam, 6 to 12 percent slopes, moderately eroded	76	1.6	31.4%
So	Sloan silty clay loam	>200	3.0	57.6%
Totals for Area of Interest			5.1	100.0%

Rating Options—Depth to Any Soil Restrictive Layer (GRQ-05-08 (HE 7))

Units of Measure: centimeters

Aggregation Method: Dominant Component

Component Percent Cutoff: None Specified

Tie-break Rule: Lower

Interpret Nulls as Zero: No

Hydrologic Soil Group (GRQ-05-08 (HE 7))

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.


Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils

Custom Soil Resource Report
Map—Hydrologic Soil Group (GRQ-05-08 (HE 7))











MAP LEGEND

Area of Interest (AOI)









 Area of Interest (AOI)

Soils





Soil Rating Polygons





 A
 A/D
 B
 B/D
 C
 C/D
 D
 Not rated or not available

Soil Rating Lines


 A
 A/D
 B
 B/D
 C
 C/D
 D
 Not rated or not available

Soil Rating Points

 A
 A/D
 B
 B/D

 C
 C/D
 D
 Not rated or not available

Water Features

 Streams and Canals

Transportation

 Rails
 Interstate Highways
 US Routes
 Major Roads
 Local Roads

Background

 Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
 Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Greene County, Ohio
 Survey Area Data: Version 11, Sep 18, 2014

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Feb 6, 2012—Mar 10, 2012

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Table—Hydrologic Soil Group (GRQ-05-08 (HE 7))

Hydrologic Soil Group— Summary by Map Unit — Greene County, Ohio (OH057)				
Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
MmD2	Miamian-Casco complex, 12 to 18 percent slopes, moderately eroded	C	0.6	10.9%
MtC2	Milton silt loam, 6 to 12 percent slopes, moderately eroded	C	1.6	31.4%
So	Sloan silty clay loam	B/D	3.0	57.6%
Totals for Area of Interest			5.1	100.0%

Rating Options—Hydrologic Soil Group (GRQ-05-08 (HE 7))

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

REPORT TO: 629
QUASAR ENERGY GROUP MB
ATTN: MIKE BOLTON
WOOSTER, OH 44691

146.007

CROP PRODUCTION SOIL TEST AND RECOMMENDATION REPORT

GROWER NAME: [REDACTED] 7

05/13/15 C

CLC LABS®

325 VENTURE DRIVE
WESTERVILLE, OHIO 43081
614-888-1663

LAB NO.		RESULTS OF ANALYSIS							CALCULATED VALUES						RESULTS OF ANALYSIS																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
3171		Soil pH	Buffer pH	Pounds per Acre Available Nutrient				% Organic Matter	Cation Exchange Capacity	% Base Saturation					Pounds per Acre Available Nutrient																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
Field	Sample			P1	K	Ca	Mg			K	Ca	Mg	H	Na	Zn	Mn	Cu	Fe	S	B																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
		7.3		58	232	4186	475	3.1	12.7	2.3	82	16																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								

DISPLAY OF AVERAGE RESULTS

SURPLUS																				
HIGH																				
MEDIUM		*		*	*	*	*	*	*	*	*	*								
LOW		*	*	*	*	*	*	*	*	*	*	*								

3171		RECOMMENDATIONS FOR			LIME		NUTRIENT RECOMMENDATIONS POUNDS PER ACRE								RECOMMENDATION TYPE	
FIELD NUMBER	SAMPLE NUMBER	ACRES	CROP	YIELD GOAL & UNITS	RATE TONS/A	LIME TYPE	N	P ₂ O ₅	K ₂ O	Zn	S	Mn	B	Cu	Build-up amounts	
		7.0	CORN GRAIN	200BU			175	75	180						P205	K20
																105 1 yr

Build-up amounts are already included in recommendation. Total amounts minus

SEE COMMENTS ON REVERSE SIDE

ED_014244A_00000151-00053

Division of Surface Water
Application for Authorization
Class B Beneficial Use Sites

Form BUA-2

Owner Consent for Beneficial Use

Exemption 6

Certification Statement

1. I agree to allow biosolids generated by the treatment plant identified on Form BUA-1 to be beneficially used on my property at agronomic rates.
2. I agree to allow federal, state and local regulatory staff access to the beneficial use site for the purposes of inspecting and authorizing the beneficial use site, beneficially using biosolids, and collecting and analyzing samples from the beneficial use site. I reserve the right to ask the above parties for proper identification at any time.
3. I certify that I am holder of legal title to the property described on application form BUA-4, or am authorized by the holder to give consent for the land application of biosolids, and that there are no restrictions to the granting of consent under this form.

Exemption 6

12/12/14
e

In the event the owner of the beneficial use site changes, Form BUA-2 must be revised and resubmitted to Ohio EPA.



GRQ-06-01 (HER 9)

GRQ-06-02 (HER 40)

Byron Rd

235

1172 ft

© 2015 Google

Google earth

ED_014244A_00000151-00055



Beneficial Use Site Information

Ohio EPA Site I.D. (Ohio EPA Use Only)

Field site I.D.: GRQ-06-01																	
Beneficial use site location: E of Bryon Rd, 0.6 miles S of Yellow Springs Fairfield Rd																	
County: Greene		Township: Bath															
Latitude: 39°48'55.35"N		Longitude: 83°58'47.96"W															
Total acreage proposed for beneficial use: 9.7																	
Type of beneficial use to be performed: Surface application <input type="checkbox"/> Injection or immediate incorporation <input checked="" type="checkbox"/>		Ground slope percent: <table border="1"> <tr> <td>Less than 15%</td> <td><input checked="" type="checkbox"/></td> <td>15% to 19.9%</td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td>Greater than 20%</td> <td><input type="checkbox"/></td> <td></td> <td></td> </tr> </table>		Less than 15%	<input checked="" type="checkbox"/>	15% to 19.9%	<input checked="" type="checkbox"/>	Greater than 20%	<input type="checkbox"/>								
Less than 15%	<input checked="" type="checkbox"/>	15% to 19.9%	<input checked="" type="checkbox"/>														
Greater than 20%	<input type="checkbox"/>																
Soil pH (s.u): 6.7		Soil phosphorus (mg/kg): 11.5															
Bedrock depth (feet): >3ft		Bray Kurtz P1 <input checked="" type="checkbox"/> Mehlich 3 <input type="checkbox"/>															
Type of crops to be grown:		<table border="1"> <thead> <tr> <th>Crop Type</th> <th>Expected Yield</th> </tr> </thead> <tbody> <tr> <td>Corn</td> <td>180 bu</td> </tr> <tr> <td>Soybeans</td> <td>60 bu</td> </tr> <tr> <td>Wheat</td> <td></td> </tr> <tr> <td>Pasture</td> <td></td> </tr> <tr> <td>Hay</td> <td></td> </tr> <tr> <td>Other:</td> <td></td> </tr> </tbody> </table>		Crop Type	Expected Yield	Corn	180 bu	Soybeans	60 bu	Wheat		Pasture		Hay		Other:	
Crop Type	Expected Yield																
Corn	180 bu																
Soybeans	60 bu																
Wheat																	
Pasture																	
Hay																	
Other:																	
Soil Types:																	
Soil Unit Symbol	Soil Unit Name	Hydrologic Soil Group	Flooding Frequency Class														
Ag	Algiers silt loam	B/D	Frequent														
MmD2	Miamian-Casco complex, 12-18% slopes, moderately eroded	C	None														
MoB2	Miamian-Eldean silt loams, 2-6% slopes, moderately eroded	C	None														
MoC2	Miamian-Eldean silt loams, 6-12% slopes, moderately eroded	C	None														
Ws	Westland silty clay loam	C/D	None														

Division of Surface Water
Application for Authorization: Class B Beneficial Use Sites

Ohio EPA Application for Authorization (1/15)

Form BUA-5

Applicable isolation distances:

Type of Isolation Distance			
Surface waters of the state	<input checked="" type="checkbox"/>	Sinkhole/UIC class V drainage	<input type="checkbox"/>
Occupied building	<input checked="" type="checkbox"/>	Private potable water source	<input type="checkbox"/>
Medical care facility	<input type="checkbox"/>		

Are any endangered species or endangered species habitats located on the beneficial use site?

☐ Yes ☒ No

If "Yes" is marked, list the types of endangered species or endangered species habitat:

--	--

Have biosolids been beneficially used on the site since July 20, 1993?

☐ Yes ☒ No

If "Yes" is marked, list the biosolids generators and years beneficial use occurred:

Generator	NPDES permit No.	Year of Beneficial Use

The application must also include all of the following:

- A soil map of the proposed beneficial use site.
- A frequency flood class map of the proposed beneficial use site.
- An aerial map of the proposed beneficial use site that clearly identifies the entrance of the beneficial use site from the nearest road and all applicable isolation distances as established in Chapter 3745-40 of the Ohio Administrative Code.
- A vicinity road map at or near the township level that clearly identifies the proposed beneficial use site with all roads labeled.
- A copy of the most recent soil test results identified in this form.

GRQ-06-01 (HER 9)

Total Acreage: 9.7 Acres



GRQ-06-01 (HER 9)

0 150 300 600 Feet

- Residences
- Waterways
- 33ft Water Buffer
- 100ft Res Buffer
- 300ft Res Buffer

GRQ-06-01 (HER 9)

Total Acreage: 9.7 Acres



0 150 300 600 Feet

—— 5ft Contours


Custom Soil Resource Report Soil Map



Custom Soil Resource Report


MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)


Soils


 Soil Map Unit Polygons

 Soil Map Unit Lines


 Soil Map Unit Points

Special Point Features

 Blowout

 Borrow Pit


 Clay Spot


 Closed Depression


 Gravel Pit


 Gravelly Spot

 Landfill


 Lava Flow


 Marsh or swamp


 Mine or Quarry


 Miscellaneous Water


 Perennial Water

 Rock Outcrop

 Saline Spot


 Sandy Spot


 Severely Eroded Spot


 Sinkhole


 Slide or Slip


 Sodic Spot


 Spoil Area

 Stony Spot


 Very Stony Spot

 Wet Spot

 Other


 Special Line Features


Water Features


 Streams and Canals


Transportation

 Rails

 Interstate Highways

 US Routes

 Major Roads

 Local Roads

Background

 Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Greene County, Ohio
Survey Area Data: Version 11, Sep 18, 2014

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Feb 6, 2012—Mar 10, 2012

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Greene County, Ohio (OH057)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Ag	Algiers silt loam	6.3	68.0%
MmD2	Miamian-Casco complex, 12 to 18 percent slopes, moderately eroded	0.4	3.8%
MoB2	Miamian-Eldean silt loams, 2 to 6 percent slopes, moderately eroded	0.0	0.1%
MoC2	Miamian-Eldean silt loams, 6 to 12 percent slopes, moderately eroded	1.4	14.8%
Ws	Westland silty clay loam	1.2	13.3%
Totals for Area of Interest		9.2	100.0%

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.


Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially

Custom Soil Resource Report Map—Depth to Any Soil Restrictive Layer (GRQ-0601)










MAP LEGEND

Area of Interest (AOI)








 Area of Interest (AOI)

Soils







Soil Rating Polygons


-  0 - 25
-  25 - 50
-  50 - 100
-  100 - 150
-  150 - 200
-  > 200
-  Not rated or not available

Soil Rating Lines

-  0 - 25
-  25 - 50
-  50 - 100
-  100 - 150
-  150 - 200
-  > 200
-  Not rated or not available

Soil Rating Points

-  0 - 25
-  25 - 50
-  50 - 100
-  100 - 150
-  150 - 200
-  > 200

 Not rated or not available


Water Features

 Streams and Canals

Transportation

-  Rails
-  Interstate Highways
-  US Routes
-  Major Roads
-  Local Roads

Background

 Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Greene County, Ohio
Survey Area Data: Version 11, Sep 18, 2014

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Feb 6, 2012—Mar 10, 2012

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Table—Depth to Any Soil Restrictive Layer (GRQ-0601)

Depth to Any Soil Restrictive Layer— Summary by Map Unit — Greene County, Ohio (OH057)				
Map unit symbol	Map unit name	Rating (centimeters)	Acres in AOI	Percent of AOI
Ag	Algiers silt loam	>200	6.3	68.0%
MmD2	Miamian-Casco complex, 12 to 18 percent slopes, moderately eroded	>200	0.4	3.8%
MoB2	Miamian-Eldean silt loams, 2 to 6 percent slopes, moderately eroded	>200	0.0	0.1%
MoC2	Miamian-Eldean silt loams, 6 to 12 percent slopes, moderately eroded	>200	1.4	14.8%
Ws	Westland silty clay loam	>200	1.2	13.3%
Totals for Area of Interest			9.2	100.0%

Rating Options—Depth to Any Soil Restrictive Layer (GRQ-0601)*Units of Measure:* centimeters*Aggregation Method:* Dominant Component*Component Percent Cutoff:* None Specified*Tie-break Rule:* Lower*Interpret Nulls as Zero:* No**Hydrologic Soil Group (GRQ-06-01)**

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.


Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that

Custom Soil Resource Report
Map—Hydrologic Soil Group (GRQ-06-01)











MAP LEGEND

Area of Interest (AOI)









 Area of Interest (AOI)

Soils





Soil Rating Polygons





 A
 A/D
 B
 B/D
 C
 C/D
 D
 Not rated or not available

Soil Rating Lines

 A
 A/D
 B
 B/D
 C
 C/D
 D
 Not rated or not available

Soil Rating Points

 A
 A/D
 B
 B/D

 C
 C/D
 D
 Not rated or not available

Water Features

 Streams and Canals

Transportation

 Rails
 Interstate Highways
 US Routes
 Major Roads
 Local Roads

Background

 Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
 Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Greene County, Ohio
 Survey Area Data: Version 11, Sep 18, 2014

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Feb 6, 2012—Mar 10, 2012

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Table—Hydrologic Soil Group (GRQ-06-01)

Hydrologic Soil Group— Summary by Map Unit — Greene County, Ohio (OH057)				
Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
Ag	Algiers silt loam	B/D	6.3	68.0%
MmD2	Miamian-Casco complex, 12 to 18 percent slopes, moderately eroded	C	0.4	3.8%
MoB2	Miamian-Eldean silt loams, 2 to 6 percent slopes, moderately eroded	C	0.0	0.1%
MoC2	Miamian-Eldean silt loams, 6 to 12 percent slopes, moderately eroded	C	1.4	14.8%
Ws	Westland silty clay loam	C/D	1.2	13.3%
Totals for Area of Interest			9.2	100.0%

Rating Options—Hydrologic Soil Group (GRQ-06-01)*Aggregation Method: Dominant Condition**Component Percent Cutoff: None Specified**Tie-break Rule: Higher*

REPORT TO: 629

QUASAR ENERGY GROUP
ATTN: MIKE BOLTON
WOOSTER, OH 44691

MB

146.008

CROP PRODUCTION
SOIL TEST AND RECOMMENDATION REPORT

GROWER NAME: HER 9

05/13/15 C

CLC LABS®

325 VENTURE DRIVE
WESTERVILLE, OHIO 43081
614-888-1663

LAB NO.		RESULTS OF ANALYSIS							CALCULATED VALUES						RESULTS OF ANALYSIS							
3171		Soil pH	Buffer pH	Pounds per Acre Available Nutrient				% Organic Matter	Cation Exchange Capacity	% Base Saturation					Pounds per Acre Available Nutrient							
Field	Sample			P	K	Ca	Mg			K	Ca	Mg	H	Na	Zn	Mn	Cu	Fe	S	B		
		6.7	7.22	23	175	2644	551	1.8	9.1	2.5	73	25										
AVERAGE RESULTS →				23	175	2644	551	1.8	9.1	2.5	73	25										

DISPLAY OF AVERAGE RESULTS

SURPLUS																						
HIGH							*															
MEDIUM							*				*	*										
		*	*	*	*	*	*	*	*	*	*	*										
LOW		*	*	*	*	*	*	*	*	*	*	*										
		*	*	*	*	*	*	*	*	*	*	*										

3171		RECOMMENDATIONS FOR				LIME		NUTRIENT RECOMMENDATIONS POUNDS PER ACRE								RECOMMENDATION TYPE	
FIELD NUMBER	SAMPLE NUMBER	ACRES	CROP	YIELD GOAL & UNITS	RATE TONS/A	LIME TYPE		N	P ₂ O ₅	K ₂ O	Zn	S	Mn	B	Cu		Build-up amounts
		9.0	CORN GRAIN	200BU	0.0			200	205	280							P205 K20
																	120 2 yr 185 1 yr

Build-up amounts are already included in recommendation. Total amounts minus
Build-up amounts equal annual requirements which includes crop removal amounts.

SEE COMMENTS ON REVERSE SIDE

ED_014244A_00000151-00069

Beneficial Use Site Information

Ohio EPA Site I.D. (Ohio EPA Use Only)

Field site I.D.: GRQ-06-02																	
Beneficial use site location: 0.3 miles E of Bryon Rd, 0.6 miles S of Yellow Springs Fairfield Rd																	
County: Greene		Township: Bath															
Latitude: 39°48'55.35"N		Longitude: 83°58'47.96"W															
Total acreage proposed for beneficial use:																	
Type of beneficial use to be performed: Surface application <input type="checkbox"/> Injection or immediate incorporation <input checked="" type="checkbox"/>		Ground slope percent: <table border="1"> <tr> <td>Less than 15%</td> <td><input checked="" type="checkbox"/></td> <td>15% to 19.9%</td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td>Greater than 20%</td> <td><input type="checkbox"/></td> <td></td> <td></td> </tr> </table>		Less than 15%	<input checked="" type="checkbox"/>	15% to 19.9%	<input checked="" type="checkbox"/>	Greater than 20%	<input type="checkbox"/>								
Less than 15%	<input checked="" type="checkbox"/>	15% to 19.9%	<input checked="" type="checkbox"/>														
Greater than 20%	<input type="checkbox"/>																
Soil pH (s.u): 7.5		Soil phosphorus (mg/kg): 20.8															
Bedrock depth (feet):		Bray Kurtz P1 <input checked="" type="checkbox"/> Mehlich 3 <input type="checkbox"/>															
Type of crops to be grown: <table border="1"> <thead> <tr> <th>Crop Type</th> <th>Expected Yield</th> </tr> </thead> <tbody> <tr><td>Corn</td><td></td></tr> <tr><td>Soybeans</td><td></td></tr> <tr><td>Wheat</td><td></td></tr> <tr><td>Pasture</td><td></td></tr> <tr><td>Hay</td><td></td></tr> <tr><td>Other:</td><td></td></tr> </tbody> </table>				Crop Type	Expected Yield	Corn		Soybeans		Wheat		Pasture		Hay		Other:	
Crop Type	Expected Yield																
Corn																	
Soybeans																	
Wheat																	
Pasture																	
Hay																	
Other:																	
Soil Types:																	
Soil Unit Symbol	Soil Unit Name	Hydrologic Soil Group	Flooding Frequency Class														
Ag	Algiers silt loam	B/D	Frequent														
Bs	Brookston silty clay loam, fine texture, 0-2% slopes	C/D	None														
EmB2	Eldean silt loam, 2-6% slopes, moderately eroded	B	None														
MhB	Miamian silt loam, 2-6% slopes	C	None														
MmD2	Miamian-Casco complex, 12-18% slopes, moderately eroded	C	None														
MoB2	Miamian-Eldean silt loams, 2-6% slopes, moderately eroded	C	None														

Division of Surface Water
Application for Authorization: Class B Beneficial Use Sites

MoC2	Miamian-Eldean silt loams, 6-12% slopes, moderately eroded	C	None
MtB	Milton silt loam, 2-6% slopes	C	None
MtC2	Milton silt loam, 6-12% slopes, moderately eroded	C	None

Ohio EPA Application for Authorization (1/15)

Form BUA-5

Applicable isolation distances:

Type of Isolation Distance			
Surface waters of the state	<input checked="" type="checkbox"/>	Sinkhole/UIC class V drainage	<input type="checkbox"/>
Occupied building	<input type="checkbox"/>	Private potable water source	<input type="checkbox"/>
Medical care facility	<input type="checkbox"/>		

Are any endangered species or endangered species habitats located on the beneficial use site?

☐ Yes ☒ No

If "Yes" is marked, list the types of endangered species or endangered species habitat:

--

Have biosolids been beneficially used on the site since July 20, 1993?

☐ Yes ☒ No

If "Yes" is marked, list the biosolids generators and years beneficial use occurred:

Generator	NPDES permit No.	Year of Beneficial Use

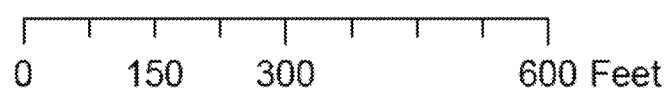
Division of Surface Water
Application for Authorization: Class B Beneficial Use Sites

The application must also include all of the following:

- A soil map of the proposed beneficial use site.
- A frequency flood class map of the proposed beneficial use site.
- An aerial map of the proposed beneficial use site that clearly identifies the entrance of the beneficial use site from the nearest road and all applicable isolation distances as established in Chapter 3745-40 of the Ohio Administrative Code.
- A vicinity road map at or near the township level that clearly identifies the proposed beneficial use site with all roads labeled.
- A copy of the most recent soil test results identified in this form.

GRQ-06-02 (HER 40)

Total Acreage: 38.4 Acres



- Waterways
- 33ft Water Buffer
- MtB Soil Exclusion
- MtC2 Soil Exclusion
- Residences
- 100ft Res Buffer
- 300ft Res Buffer

GRQ-06-02 (HER 40)

Total Acreage: 38.4 Acres



0 150 300 600 Feet

—— 5ft Contours


Custom Soil Resource Report Soil Map



Custom Soil Resource Report


MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)


Soils


 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

Special Point Features

 Blowout


 Borrow Pit

 Clay Spot

 Closed Depression

 Gravel Pit

 Gravelly Spot

 Landfill


 Lava Flow

 Marsh or swamp

 Mine or Quarry

 Miscellaneous Water


 Perennial Water

 Rock Outcrop

 Saline Spot

 Sandy Spot

 Severely Eroded Spot


 Sinkhole


 Slide or Slip


 Sodic Spot

 Spoil Area

 Stony Spot

 Very Stony Spot

 Wet Spot

 Other

 Special Line Features


Water Features


 Streams and Canals


Transportation

 Rails

 Interstate Highways

 US Routes

 Major Roads

 Local Roads

Background

 Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Greene County, Ohio
Survey Area Data: Version 11, Sep 18, 2014

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Feb 6, 2012—Mar 10, 2012

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Greene County, Ohio (OH057)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Ag	Algiers silt loam	5.6	11.7%
Bs	Brookston silty clay loam, fine texture, 0 to 2 percent slopes	1.7	3.5%
EmB2	Eldean silt loam, 2 to 6 percent slopes, moderately eroded	9.4	19.6%
MhB	Miamian silt loam, 2 to 6 percent slopes	2.6	5.4%
MmD2	Miamian-Casco complex, 12 to 18 percent slopes, moderately eroded	4.1	8.5%
MoB2	Miamian-Eldean silt loams, 2 to 6 percent slopes, moderately eroded	7.7	16.1%
MoC2	Miamian-Eldean silt loams, 6 to 12 percent slopes, moderately eroded	15.7	32.9%
MtB	Milton silt loam, 2 to 6 percent slopes	0.6	1.3%
MtC2	Milton silt loam, 6 to 12 percent slopes, moderately eroded	0.4	0.9%
Totals for Area of Interest		47.8	100.0%

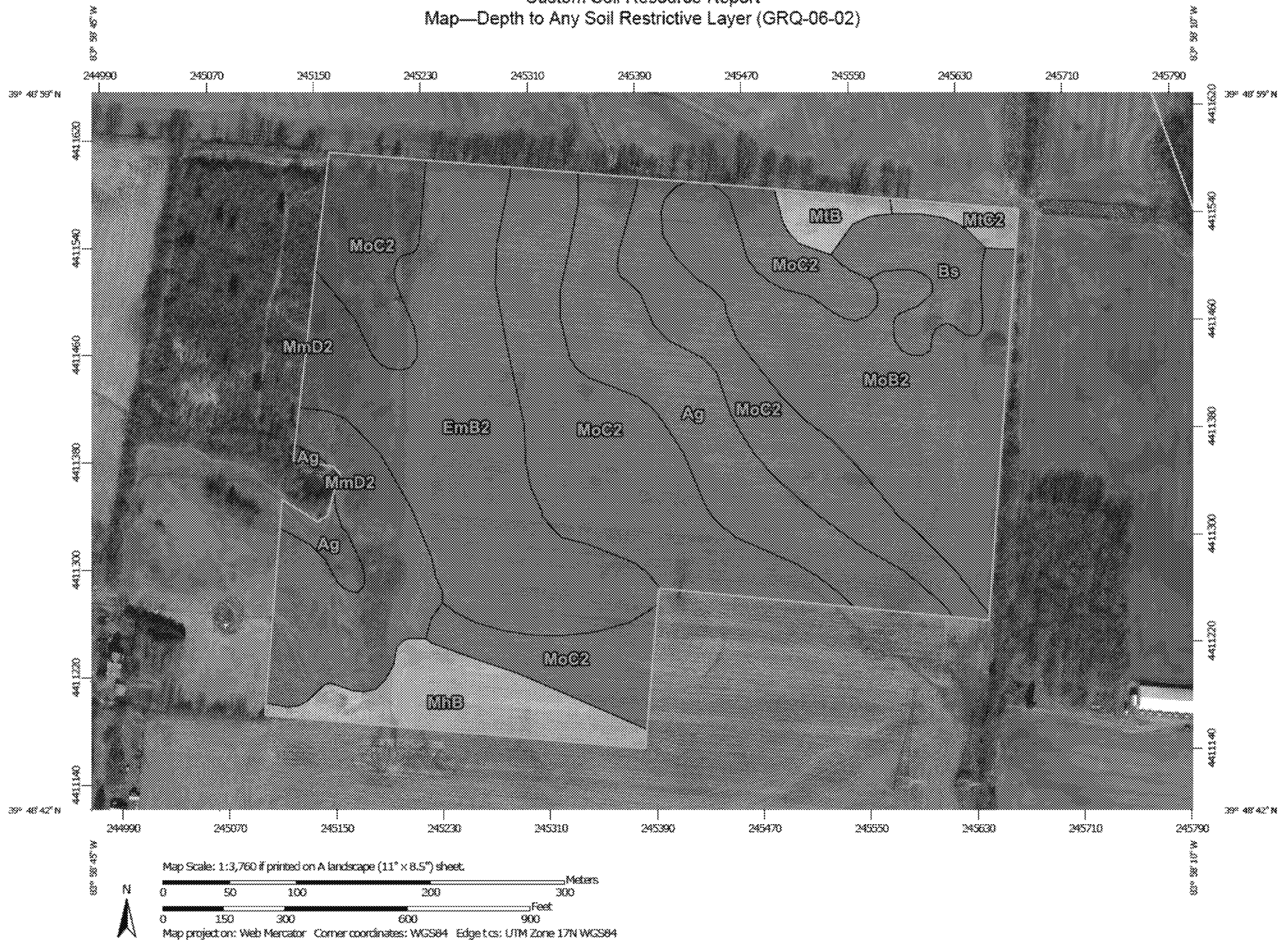
Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.






























A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties

Custom Soil Resource Report
Map—Depth to Any Soil Restrictive Layer (GRQ-06-02)



MAP LEGEND

Area of Interest (AOI)	 Area of Interest (AOI)	 Not rated or not available
Soils		Water Features
Soil Rating Polygons		 Streams and Canals
 0 - 25		Transportation
 25 - 50		 Rails
 50 - 100		 Interstate Highways
 100 - 150		 US Routes
 150 - 200		 Major Roads
 > 200		 Local Roads
 Not rated or not available		Background
Soil Rating Lines		 Aerial Photography
 0 - 25		
 25 - 50		
 50 - 100		
 100 - 150		
 150 - 200		
 > 200		
 Not rated or not available		
Soil Rating Points		
 0 - 25		
 25 - 50		
 50 - 100		
 100 - 150		
 150 - 200		
 > 200		

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Greene County, Ohio
Survey Area Data: Version 11, Sep 18, 2014

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Feb 6, 2012—Mar 10, 2012

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Table—Depth to Any Soil Restrictive Layer (GRQ-06-02)

Depth to Any Soil Restrictive Layer— Summary by Map Unit — Greene County, Ohio (OH057)				
Map unit symbol	Map unit name	Rating (centimeters)	Acres in AOI	Percent of AOI
Ag	Algiers silt loam	>200	5.6	11.7%
Bs	Brookston silty clay loam, fine texture, 0 to 2 percent slopes	>200	1.7	3.5%
EmB2	Eldean silt loam, 2 to 6 percent slopes, moderately eroded	>200	9.4	19.6%
MhB	Miamian silt loam, 2 to 6 percent slopes	91	2.6	5.4%
MmD2	Miamian-Casco complex, 12 to 18 percent slopes, moderately eroded	>200	4.1	8.5%
MoB2	Miamian-Eldean silt loams, 2 to 6 percent slopes, moderately eroded	>200	7.7	16.1%
MoC2	Miamian-Eldean silt loams, 6 to 12 percent slopes, moderately eroded	>200	15.7	32.9%
MtB	Milton silt loam, 2 to 6 percent slopes	76	0.6	1.3%
MtC2	Milton silt loam, 6 to 12 percent slopes, moderately eroded	76	0.4	0.9%
Totals for Area of Interest			47.8	100.0%

Rating Options—Depth to Any Soil Restrictive Layer (GRQ-06-02)*Units of Measure:* centimeters*Aggregation Method:* Dominant Component*Component Percent Cutoff:* None Specified*Tie-break Rule:* Lower*Interpret Nulls as Zero:* No**Hydrologic Soil Group (GRQ-06-02)**

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.


Custom Soil Resource Report

Map—Hydrologic Soil Group (GRQ-06-02)











MAP LEGEND

Area of Interest (AOI)









 Area of Interest (AOI)

Soils





Soil Rating Polygons





 A
 A/D
 B
 B/D
 C
 C/D
 D
 Not rated or not available

Soil Rating Lines

 A
 A/D
 B
 B/D
 C
 C/D
 D
 Not rated or not available

Soil Rating Points

 A
 A/D
 B
 B/D

 C
 C/D
 D
 Not rated or not available

Water Features

 Streams and Canals

Transportation

 Rails
 Interstate Highways
 US Routes
 Major Roads
 Local Roads

Background

 Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
 Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Greene County, Ohio
 Survey Area Data: Version 11, Sep 18, 2014

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Feb 6, 2012—Mar 10, 2012

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Table—Hydrologic Soil Group (GRQ-06-02)

Hydrologic Soil Group— Summary by Map Unit — Greene County, Ohio (OH057)				
Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
Ag	Algiers silt loam	B/D	5.6	11.7%
Bs	Brookston silty clay loam, fine texture, 0 to 2 percent slopes	C/D	1.7	3.5%
EmB2	Eldean silt loam, 2 to 6 percent slopes, moderately eroded	B	9.4	19.6%
MhB	Miamian silt loam, 2 to 6 percent slopes	C	2.6	5.4%
MmD2	Miamian-Casco complex, 12 to 18 percent slopes, moderately eroded	C	4.1	8.5%
MoB2	Miamian-Eldean silt loams, 2 to 6 percent slopes, moderately eroded	C	7.7	16.1%
MoC2	Miamian-Eldean silt loams, 6 to 12 percent slopes, moderately eroded	C	15.7	32.9%
MtB	Milton silt loam, 2 to 6 percent slopes	C	0.6	1.3%
MtC2	Milton silt loam, 6 to 12 percent slopes, moderately eroded	C	0.4	0.9%
Totals for Area of Interest			47.8	100.0%

Rating Options—Hydrologic Soil Group (GRQ-06-02)*Aggregation Method:* Dominant Condition*Component Percent Cutoff:* None Specified*Tie-break Rule:* Higher

LAB NO.		RESULTS OF ANALYSIS							CALCULATED VALUES						RESULTS OF ANALYSIS																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
3171		Soil pH	Buffer pH	Pounds per Acre Available Nutrient				% Organic Matter	Cation Exchange Capacity	% Base Saturation					Pounds per Acre Available Nutrient																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
Field	Sample			P1	K	Ca	Mg			K	Ca	Mg	H	Na	Zn	Mn	Cu	Fe	S	B																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
		7.6		30	296	5141	898	2.6	17.0	2.2	76	22																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																

DISPLAY OF AVERAGE RESULTS																				
SURPLUS																				
HIGH							*													
MEDIUM				*	*	*	*	*	*	*	*	*								
LOW				*	*	*	*	*	*	*	*	*								

3171		RECOMMENDATIONS FOR				LIME		NUTRIENT RECOMMENDATIONS POUNDS PER ACRE								RECOMMENDATION TYPE	
FIELD NUMBER	SAMPLE NUMBER	ACRES	CROP	YIELD GOAL & UNITS	RATE TONS/A	LIME TYPE		N	P ₂ O ₅	K ₂ O	Zn	S	Mn	B	Cu	Build-up amounts	
		40.0	CORN GRAIN	200BU				190	125	55						50 1 yr	20 1 yr

05/13/15 C

REPORT TO: 629

QUASAR ENERGY GROUP
ATTN: MIKE BOLTON
WOODSTER, OH 44691

MB

SOIL TEST AND RECOMMENDATION REPORT

GROWER NAME: HER 40 B

CLC LABS®

325 VENTURE DRIVE
WESTERVILLE, OHIO 43081
614-886-1663

[illegible]

DISPLAY OF AVERAGE RESULTS

[illegible][illegible]

Build-up amounts are already included in recommendation. Total amounts minus

SEE COMMENTS ON REVERSE SIDE

ED 014244A 00000151-00085